

What is claimed is:-

1. A method for identifying a transaction corresponding to a plurality of service packets communicated between a source node and a destination node, comprising:

providing a communications data set comprising a plurality of service packets and information relating to the order in which said service packets are communicated on a communications line between a source node and a destination node; and

comparing said communications data set against a pattern characterization data set comprising information relating to a predetermined ordering of service packets corresponding to a transaction to determine whether at least a portion of said plurality of service packets correspond to said transaction.

2. The method as claimed in Claim 1, wherein said communications data set includes a received time corresponding to each service packet and said providing step comprises:

reading with a probe said service packets from said communications line; and

recording said service packets and said received time, wherein said received time corresponds substantially to the time said packet is read by said probe.

3. The method as claimed in Claim 2, wherein said probe is located between said source and destination nodes and further comprising:

25 adding to said received time for a received packet a transit time corresponding substantially to the time required by a service packet to travel from said probe to at least one of said source node and destination node.

4. The method as claimed in Claim 1, wherein a plurality of said service packets have at least one of a node address and port number and said communications data set includes a received time corresponding to each service packet and said providing step comprises:

reading with a probe said service packets from said communications line;

filtering said service packets based on at least one of node address and port number to form filtered service packets; and

recording said filtered service packets and said received time, wherein said received time corresponds substantially to the time said filtered service packet is read by said probe.

5. The method as claimed in Claim 1, wherein said service packets correspond to a plurality of threads with each thread corresponding to thread identification information and said comparing step comprises:

sorting said service packets in said communications data set into a plurality of thread data sets wherein the service packets in each thread data set have the same thread identification information.

50 6. The method as claimed in Claim 1, wherein said service packets include service request packets and service results packets, each service request corresponds to a service request, and said comparing step comprises:

55 identifying service request packets in said service packets based on the contents of said service packets.

7. The method as claimed in Claim 1, wherein said service packets include service request packets and service results packets and said comparing step comprises:

60 identifying service request packets in said service packets based on the contents of said service packets;

correlating service results packets with corresponding service request packets; and

determining the start and stop times for the service request.

65 8. The method as claimed in Claim 7, further comprising:

computing a response time for said transaction.

9. The method as claimed in Claim 7, further comprising:

70 comparing the time interval between the stop of a first service request and the start of a second service request against a predetermined value for said time interval to identify a sequence of service requests corresponding to a transaction, wherein said predetermined ordering of service packets corresponds to said sequence of service requests.

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10. The method as claimed in Claim 1, wherein said service packets correspond to a plurality of service requests and said comparing step comprises:

first matching a first service request in said
80 communications data set with a first service request in said predetermined ordering of service packets;

second matching a second service request in said communications data set with a second service request in said predetermined ordering of service packets, wherein a time
85 interval between said first and second service requests is no more than a predetermined value.

11. The method as claimed in Claim 1, wherein said service packets correspond to a plurality of service requests, said service requests correspond to a plurality of thread data
90 sets, and said comparing step comprises:

first matching a first service request corresponding to a first thread with a first service request in said predetermined ordering of service packets;

second matching a second service request corresponding to
95 a second thread with a second service request in said predetermined ordering of service packets, wherein a time interval between said first and second service requests is no more than a predetermined value.

12. A non-intrusive system for identifying a transaction
100 corresponding to a plurality of service packets communicated
between a source node and a destination node, comprising:

means for recording a plurality of service packets
communicated on a communications line between a source node
and a destination node, said recording means being in
105 communication with said communications line; and

means, in communication with said recording means, for
identifying a transaction corresponding to at least a portion
of said plurality of packets.

. 13. The non-intrusive system as claimed in Claim 12,
110 wherein said identifying means comprises means for comparing
said plurality of service packets and the order in which said
service packets are received by said recording means against
a predetermined ordering of service packets relating to said
transaction.

115 14. The non-intrusive system as claimed in Claim 12,
wherein said recording means is located on a portion of said
communications line between said source and destination nodes.

15. A method for identifying a transaction corresponding
to a plurality of service packets communicated between a
120 source node and a destination node, comprising:

providing a communications data set comprising (i) a
plurality of service packets corresponding to a plurality of
service requests and (ii) the start and stop times for each
service request; and

125 comparing the time interval between the stop of a first
service request and the start of a second service request
against a predetermined value for said time interval to
identify a sequence of said service requests corresponding to
a transaction.

130 16. The method as claimed in Claim 15, wherein said
predetermined value ranges from about 50 to about 500
milliseconds.

135 17. The method as claimed in Claim 15, wherein a portion
of said service packets correspond to a thread and at least
two service packets correspond to different threads and said
service packets comprise a plurality of service request
packets and service result packets corresponding to different
service requests and said comparing step comprises:

140 identifying service request packets in said service
packets;

correlating service result packets with corresponding
service request packets to form a plurality of service data

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subsets with the service packets in each service data subset corresponding to a service request; and

145 sorting said service data subsets by thread to form a plurality of thread data sets of service requests with the service packets in said thread data set having the same thread addresses.

18. The method as claimed in Claim 15, wherein a
150 plurality of sequences of service requests correspond to a plurality of transactions and said comparing step comprises:

recording each of said sequences of service requests and the number of occurrences of each sequence in a pattern characterization data set.

155 19. The method as claimed in Claim 15, further comprising:

selecting a second predetermined value;

comparing said time interval against said second predetermined value to identify a second sequence of said 160 service requests corresponding to a second transaction; and

recording each of said second sequences of service requests and the number of occurrences of each of said second sequences in a second data set.

20. The method as claimed in Claim 19, further
165 comprising:

selecting a third predetermined value based on the relationship between (i) the number of said sequences of service requests and said predetermined value and (ii) the

number of said second sequences of service requests and said
170 second predetermined value.

21. The method as claimed in Claim 20, further comprising:

comparing said time interval against said third predetermined value for said time interval to identify a third sequence of said service requests corresponding to a third transaction.
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22. The method as claimed in Claim 21, further comprising:

comparing said third sequence against said communications data set to determine whether at least a portion of said plurality of service packets correspond to said transaction.
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23. The method as claimed in Claim 22, further comprising:

computing a response time for said transaction.

24. The method as claimed in Claim 15, wherein said comparing step produces a pattern characterization data set listing a plurality of sequences of service requests and further comprising:

second comparing said service requests from said
190 comparing step with said pattern characterization data set to determine if said service requests are contained in said pattern characterization data set.

25. The method as claimed in Claim 15, wherein said
first service request corresponds to a first thread and said
195 second service request corresponds to a second thread.

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1 A non-intrusive system for determining transaction
level activity between a source node and a destination node,
comprising:

200 means for recording a plurality of service packets
communicated on a communications line between a source node
and a destination node, wherein said service packets relate to
a number of transactions and said recording means is in
communication with said communications line; and

205 means for determining said number of transactions in
communication with said recording means.

210 27. The non-intrusive system as claimed in Claim 26,
wherein said determining means comprises means for comparing
said plurality of service packets and the order in which said
service packets are received by said recording means against
a predetermined ordering of service packets relating to said
transaction.

215 28. The non-intrusive system as claimed in Claim 26,
wherein at least a portion of said plurality of packets relate
to different service request packets, said recording means
provides a first data set including (i) said plurality of
packets and (ii) the start and stop times for each service
request, and said determining means comprises means for
comparing the time interval between the stop time of a first
service request and the start time of a second service request
220 against a predetermined value for said time interval to

identify a sequence of said service requests corresponding to
a transaction.

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